

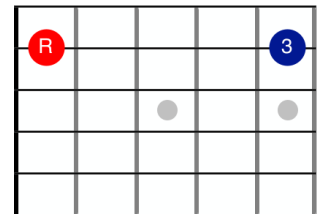
# Chord Formulas for Guitar

## Thirds on the Fretboard

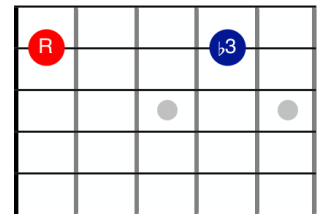
Triads and 7<sup>th</sup> chords are built by stacking 3rds above the root (the note upon which a chord is built). Most chords are built with combinations of major 3rds and minor 3rds. Two types of 7<sup>th</sup> chords include diminished 3rds, which are enharmonically equivalent to whole steps.

You can count frets on the same string to find these intervals.

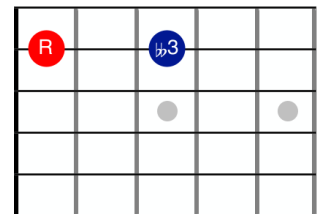
Major 3<sup>rd</sup>: Distance of 4 Frets (4 Half Steps)



Minor 3<sup>rd</sup>: Distance of 3 Frets (3 Half Steps)



Diminished 3<sup>rd</sup>: Distance of 2 Frets (2 Half Steps)

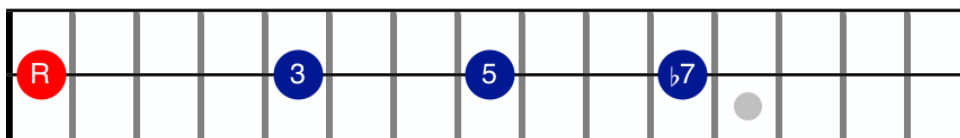


## Chord Formula Chart

To build a triad or 7<sup>th</sup> chord, begin with the root as the lowest note and then stack 3rds one at a time. The following chart shows formulas for all four types of triads and the most common 7<sup>th</sup> chords.

	Root	3rd	5th	7th
Major Triad	(Starting Note)	+ Major 3rd	+ Minor 3rd	————
Minor Triad	(Starting Note)	+ Minor 3rd	+ Major 3rd	————
Diminished Triad	(Starting Note)	+ Minor 3rd	+ Minor 3rd	————
Augmented Triad	(Starting Note)	+ Major 3rd	+ Major 3rd	————
Major 7	(Starting Note)	+ Major 3rd	+ Minor 3rd	+ Major 3rd
Minor 7	(Starting Note)	+ Minor 3rd	+ Major 3rd	+ Minor 3rd
Dominant 7	(Starting Note)	+ Major 3rd	+ Minor 3rd	+ Minor 3rd
Minor 7b5	(Starting Note)	+ Minor 3rd	+ Minor 3rd	+ Major 3rd
Diminished 7	(Starting Note)	+ Minor 3rd	+ Minor 3rd	+ Minor 3rd
7b5	(Starting Note)	+ Major 3rd	+ Diminished 3rd	+ Major 3rd
7#5	(Starting Note)	+ Major 3rd	+ Major 3rd	+ Diminished 3rd

Here's an example of how to build a chord using this information. To map out a Dominant 7 chord along one string, begin with the root. Next, find the 3<sup>rd</sup> of the chord (4 frets higher), find the 5<sup>th</sup> of the chord (3 frets higher than the 3<sup>rd</sup>), and find the 7<sup>th</sup> of the chord (3 frets higher than the 5<sup>th</sup>).



## Creating Chords and Arpeggios

You can use the formulas in the Chord Formula Chart to plot out the notes of any given triad or 7<sup>th</sup> chord all over the fretboard, which in turn gives you the information you need to play chords and arpeggios anywhere on the neck.

With enough time and practice, you'll be able to play any given chord or arpeggio without having to think about it much. Until then, you can use this 3-step process for mapping out chords. **For this, you need to know the names of the notes on the entire fretboard.** [Check out this video](#) if you need help learning the fretboard.

### Step 1

Find the root note on any string as low on the neck as possible.

### Step 2

Plot out the 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> (if applicable) [on the same string](#) as shown on the previous page. This gives you the names of the other notes in the chord.

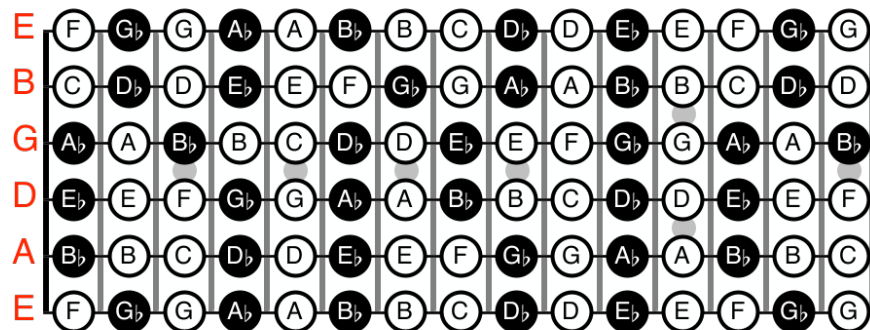
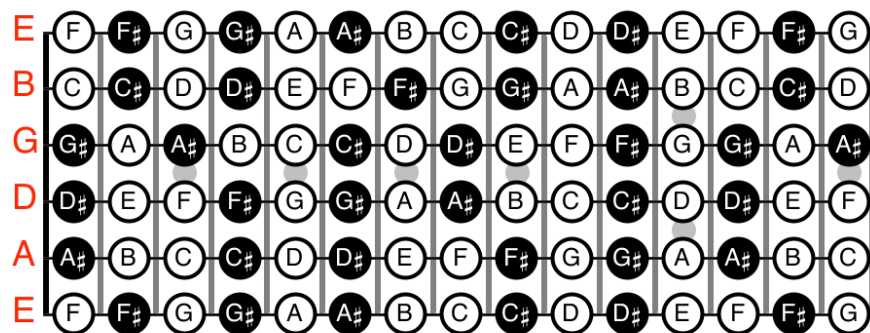
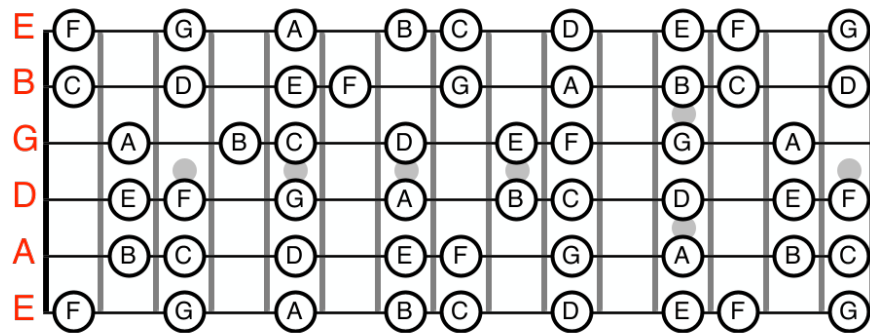
### Step 3

Map out those same notes on the rest of the strings.

In the following pages, we'll go through one example for each type of chord in the Chord Formula Chart on page 2, using G as the root.

## Notes on the Fretboard

As mentioned, you must know the notes on the fretboard to use the information this PDF. For reference, here are three fretboard diagrams showing 1) the natural notes, 2) accidentals spelled as sharps, and 3) accidentals spelled as flats. [This video](#) can help you get started memorizing the fretboard.



## Chord-Building Examples (G Root Note)

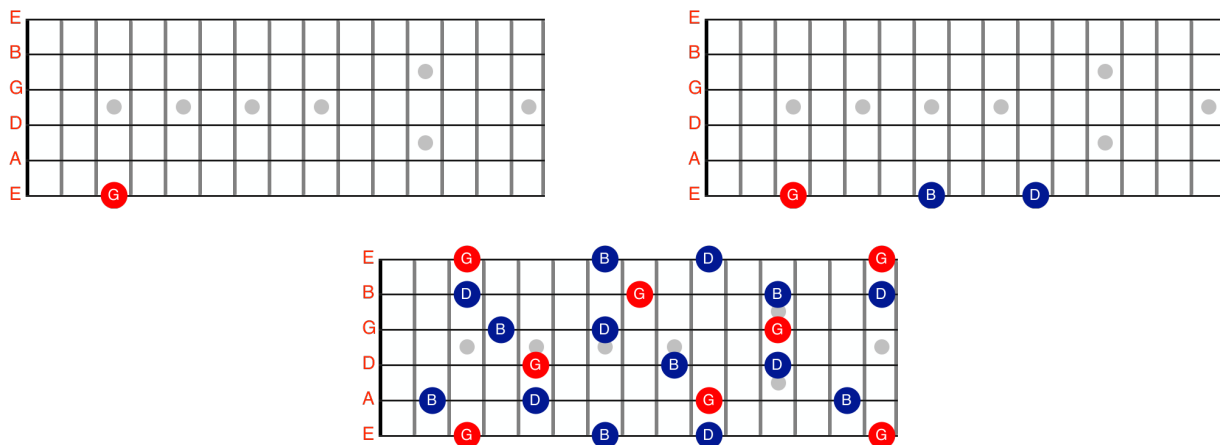
Major 3<sup>rd</sup> = 4 Frets • Minor 3<sup>rd</sup> = 3 Frets • Diminished 3<sup>rd</sup> = 2 Frets

### G Major Triad

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a major 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Then add a minor 3<sup>rd</sup> to find the 5<sup>th</sup> of the chord. Your root, 3<sup>rd</sup>, and 5<sup>th</sup> are G-B-D.

Step 3: Map out every G, B, and D on the rest of the fretboard.

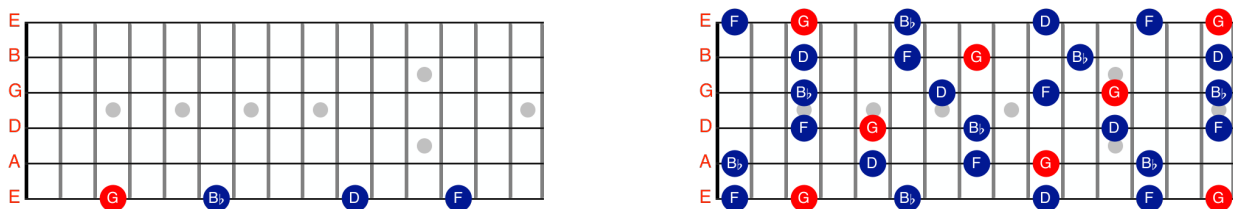


### G Minor Triad

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a minor 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Then add a major 3<sup>rd</sup> to find the 5<sup>th</sup> of the chord. Your root, 3<sup>rd</sup>, and 5<sup>th</sup> are G-B $\flat$ -D.

Step 3: Map out every G, B $\flat$ , and D on the rest of the fretboard.



Major 3<sup>rd</sup> = 4 Frets • Minor 3<sup>rd</sup> = 3 Frets • Diminished 3<sup>rd</sup> = 2 Frets

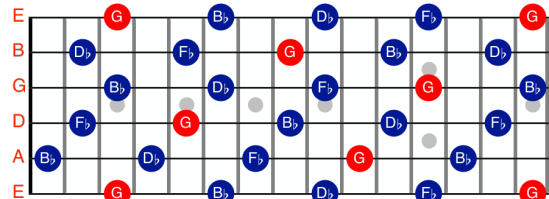
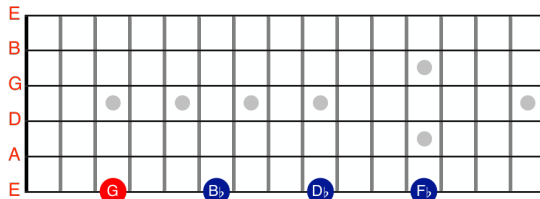
## G Diminished Triad

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a minor 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Then add another minor 3<sup>rd</sup> to find the 5<sup>th</sup> of the chord.

Your root, 3<sup>rd</sup>, and 5<sup>th</sup> are G-B $\flat$ -D $\flat$ .

Step 3: Map out every G, B $\flat$ , and D $\flat$  on the rest of the fretboard.



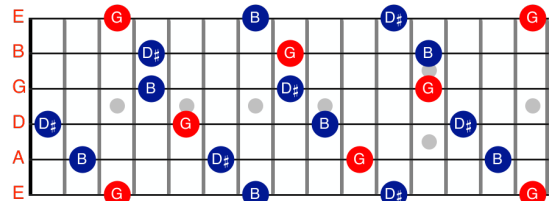
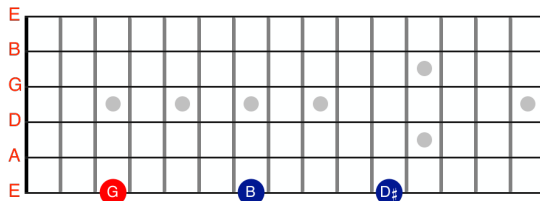
## G Augmented Triad

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a major 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Then add another major 3<sup>rd</sup> to find the 5<sup>th</sup> of the chord.

Your root, 3<sup>rd</sup>, and 5<sup>th</sup> are G-B-D $\sharp$ .

Step 3: Map out every G, B, and D $\sharp$  on the rest of the fretboard.



That takes care of the four types of triads (major, minor, diminished, and augmented). The rest of this PDF covers 7<sup>th</sup> chords. It's the same process; there's just one more note to find.

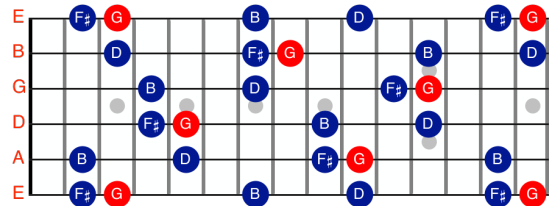
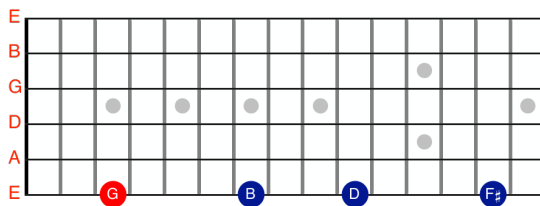
Major 3<sup>rd</sup> = 4 Frets • Minor 3<sup>rd</sup> = 3 Frets • Diminished 3<sup>rd</sup> = 2 Frets

## G Major 7

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a major 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Add a minor 3<sup>rd</sup> to that to find the 5<sup>th</sup> of the chord. Add another major 3<sup>rd</sup> on top of that to find the 7<sup>th</sup> of the chord. Your root, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> are G-B-D-F#.

Step 3: Map out every G, B, D, and F# on the rest of the fretboard.

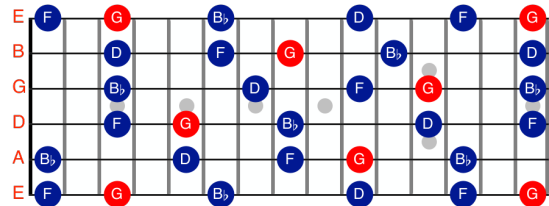
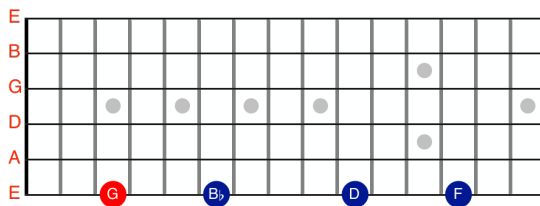


## G Minor 7

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a minor 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Add a major 3<sup>rd</sup> to that to find the 5<sup>th</sup> of the chord. Add another minor 3<sup>rd</sup> on top of that to find the 7<sup>th</sup> of the chord. Your root, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> are G-Bb-D-F.

Step 3: Map out every G, Bb, D, and F on the rest of the fretboard.



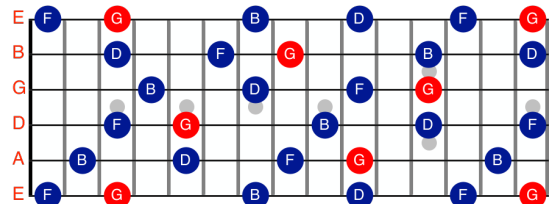
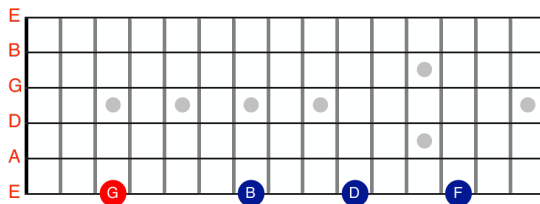
Major 3<sup>rd</sup> = 4 Frets • Minor 3<sup>rd</sup> = 3 Frets • Diminished 3<sup>rd</sup> = 2 Frets

## G Dominant 7 (Better Known Simply as G7)

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a major 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Add a minor 3<sup>rd</sup> to that to find the 5<sup>th</sup> of the chord. Add another minor 3<sup>rd</sup> on top of that to find the 7<sup>th</sup> of the chord. Your root, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> are G-B-D-F.

Step 3: Map out every G, B, D, and F on the rest of the fretboard.

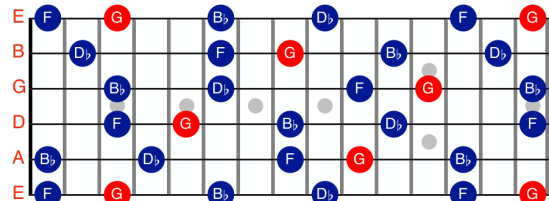
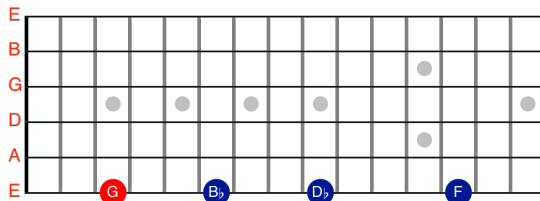


## G Minor 7b5 (Also Known as Half-Diminished)

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a minor 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Add another minor 3<sup>rd</sup> to that to find the 5<sup>th</sup> of the chord. Add another major 3<sup>rd</sup> on top of that to find the 7<sup>th</sup> of the chord. Your root, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> are G-Bb-Db-F.

Step 3: Map out every G, Bb, Db, and F on the rest of the fretboard.





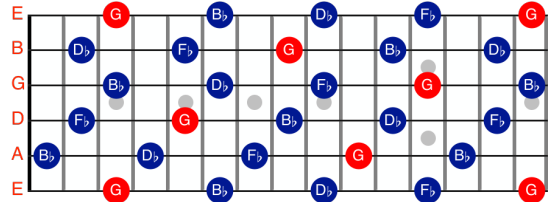
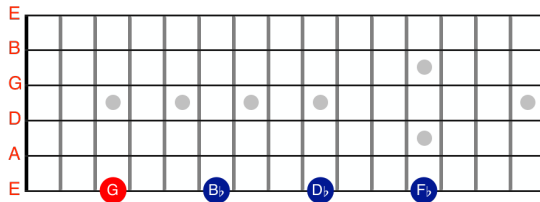
Major 3<sup>rd</sup> = 4 Frets • Minor 3<sup>rd</sup> = 3 Frets • Diminished 3<sup>rd</sup> = 2 Frets

## G Diminished 7

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a minor 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Add another minor 3<sup>rd</sup> to that to find the 5<sup>th</sup> of the chord. Add another minor 3<sup>rd</sup> on top of that to find the 7<sup>th</sup> of the chord. Your root, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> are G-Bb-Db-Fb.

Step 3: Map out every G, Bb, Db, and Fb on the rest of the fretboard. (Fb and E are the same note. To spell this chord correctly as a Gdim7, it is labeled Fb.)

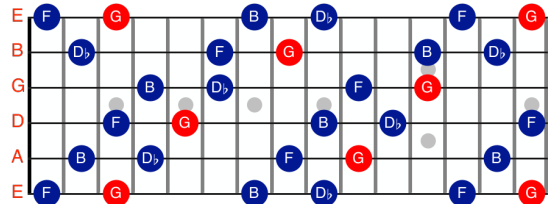
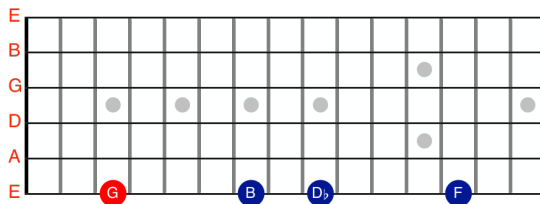


## G7b5

Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a major 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Add a diminished 3<sup>rd</sup> to that to find the 5<sup>th</sup> of the chord. Add another major 3<sup>rd</sup> on top of that to find the 7<sup>th</sup> of the chord. Your root, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> are G-B-Db-F.

Step 3: Map out every G, B, Db, and F on the rest of the fretboard.



Major 3<sup>rd</sup> = 4 Frets • Minor 3<sup>rd</sup> = 3 Frets • Diminished 3<sup>rd</sup> = 2 Frets

## G7#5

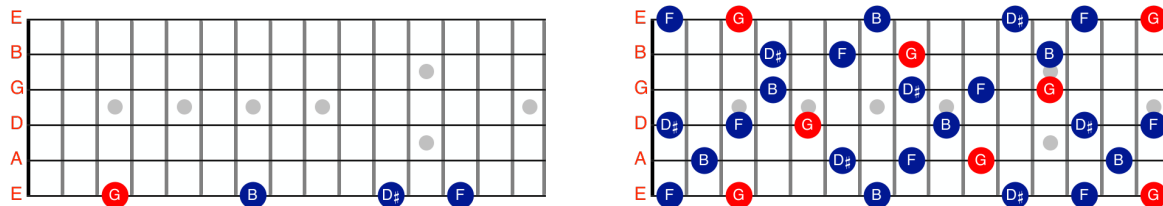
Step 1: Find a fretted G toward the end of the neck.

Step 2: On the same string, add a major 3<sup>rd</sup> to find the 3<sup>rd</sup> of the chord. Add another major 3<sup>rd</sup> to that to find the 5<sup>th</sup> of the chord.

Add a diminished 3<sup>rd</sup> on top of that to find the 7<sup>th</sup> of the chord.

Your root, 3<sup>rd</sup>, 5<sup>th</sup>, and 7<sup>th</sup> are G-B-D#-F.

Step 3: Map out every G, B, D#, and F on the rest of the fretboard.



The examples in the PDF are all based on G, but you can go through the same process starting from any root note.